In the Claims:

Please amend Claims 1, 6, 24, 29, 52 and 53; cancel Claims 61-62; and add new Claims 63-64, all as shown below. Applicant respectfully reserves the right to prosecute any originally presented claims in a continuing or future application.

1. (Currently Amended) A system for ~~session-based~~ retrieval at a client system of content from a server system, comprising:

a communication protocol that enables an asynchronous connection over a network between a client system and a server system, and allows the client system to send via the network, and within a session between the client system and the server system, a lengthening string composed of a plurality of consecutively input characters, to query the server system for string-based content, while ~~receiving an asynchronous response~~ asynchronously receiving consecutive responses from the server as the characters are being input;

a client object, in communication with a client software at the client system and with the communication protocol, wherein the client object receives additional characters from the client software, and as consecutive characters are being received, transmits via the network to a server object at the server system a plurality of consecutive queries, within the ~~same~~ session between the client system and the server system, to retrieve content from the server system, wherein each consecutive query lengthens the string by the additional characters, to form a lengthening string for retrieving matching content from the server system; and

a server object, in communication with the server system, and with the client object via the communication protocol, wherein the server object in response to receiving the consecutive queries that form the lengthening string, automatically uses the lengthening string to query and retrieve content information from the server system that matches the lengthening string, and wherein the server object asynchronously returns, while the additional characters are being input and the string is being lengthened during the session, consecutive responses containing increasingly matching content information to the client object for immediate use by the client system.

2. (Previously Presented) The system of claim 1 wherein said client object operates on or at a first computer and said server object operates on or at a second computer, and wherein both of said first and said second computers are connected via the communication protocol.

3. (Previously Presented) The system of claim 1 wherein said server object and said client object both run on the same computer.

4. (Previously Presented) The system of claim 1 wherein the system comprises a plurality of server objects that run on a plurality of separate computers, and wherein said client queries are distributed over said separate computers.

5. (Previously Presented) The system of claim 1 wherein said server object stores previously received results from the server as stored results, and initially returns said stored results to the client in response to new client queries, without accessing the content at the server.

6. (Currently Amended) The system of claim 1 wherein said client software is embedded into a software application that provides a visual interface that indicates to an operator that the server object is currently using the lengthening query string against the content of the server system to query and retrieve content information from the server system [[.]] and allows the operator to add additional characters to lengthen the query string, while simultaneously receiving and displaying increasingly matching results in consecutive responses from the server.

7. (Previously Presented) The system of claim 1 wherein said client software is used as a content engine for another software system.

8. (Previously Presented) The system of claim 1 wherein said client software accumulates a plurality of said single character queries as they are entered into the client, before sending the plurality of said single character queries together as a single string to said server.

9. (Previously Presented) The system of claim 1 wherein said client object stores previously received responses from the server in a cache at the client and uses the previously received responses as the response to a new query by the user, without re-accessing the server.

10. (Previously Presented) The system of claim 1 wherein said client software stores a pre-defined query string and automatically transmits it to the server as the client software is first accessed, and wherein additional entry of query characters is not required before server responses are sent to the client.

11. (Previously Presented) The system of claim 1 wherein said server stores the state of query and response of the client software, and restores the state of the client software after any interruption in said communication protocol, including an automatic or manual network interruption or termination of the session.

12. (Previously Presented) The system of claim 1 where said client software adds a qualifier to the string query that is passed to the server, whereby the server can use said qualifier to execute the query and return appropriate results based on both the query string and its qualifier.

13. (Previously Presented) The system of claim 1 where said client software identifies a user of the system to the server whereby the server can store statistics and provides a history of queries and corresponding responses appropriate to said user.

14. (Previously Presented) The system of claim 1 where said server system comprises a server tier and a syndication tier, and wherein said client software communicates to the server tier on a single computer, and wherein each query is forwarded by the server tier and the syndication tier to an appropriate syndicate of content channels connected to the server tier on a different computer.

15. (Previously Presented) The system of claim 1 where said server applies a content dependent pattern and filter to characters received from the client before queries are matched against the content.

16. (Canceled).

17. (Previously Presented) The system of claim 1 where server responses comprise lists of strings, wherein each string is accompanied by corresponding metadata, whereby the metadata contains logical links to other data sources or Uniform Resource Identifiers.

18-23. (Canceled).

24. (Currently Amended) A user interface mechanism, for use with a client application of a ~~session-based~~ content retrieval system, said user interface mechanism indicating one or both of the availability of a session between said client application and a remote content server, and the status of said session, said mechanism comprising:

a user interface and input field, in communication with said client application, said input field allows a user to input data for transmission to a remote content server, wherein said input data includes a plurality of single string characters as part of a query;

a communication protocol that enables an asynchronous ~~session-based~~ connection over a network between the client and the server, and allows the client to send, within a session between the client and the server, a plurality of consecutively input query strings via the network, to query the server for string-based content wherein the client receives additional characters from a user, and as each character is being received transmits to a server object at the server a plurality of consecutive queries, within the ~~same~~ session between the client and the server, to retrieve content from the server, and while ~~receiving an asynchronous response~~ asynchronously receiving consecutive responses from the server as the characters are being input;

a server object, in communication with the server, and in communication with the client via the communication protocol, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving each query as it is being lengthened by one or more additional characters, automatically matches the lengthening query string against the content of the server, and asynchronously returns consecutive responses containing increasingly relevant content information to the client for immediate use by the client;

a session connection indicator, said session connection indicator displayed within a first portion of the input field, for indicating the availability of a connection between said client application and said content server; and [[,]]

a status indicator, said status indicator displayed within the first or a second portion of the input field, for indicating during said session both the status of increasingly available content at said content server for selection by said user at that input field, and that the server object is currently using the lengthening query string against the content of the server system to query and retrieve content information from the server system.

25. (Previously Presented) The mechanism of claim 24, wherein several input fields in the user interface have session connection indicators and status indicators to indicate to the user the availability of a connection between said client application and said content server for those input fields, and the status of increasingly available content at said content server for selection by said user at those input fields.

26. (Previously Presented) The mechanism of claim 24, wherein said session connection indicator displays a triangular display element to indicate the presence of said connection, and does not display said triangular display element to indicate the absence of said connection.

27. (Previously Presented) The mechanism of claim 24, wherein said status indicator displays one, or a plurality of, arrow display elements to indicate the transfer of data from said client application to said server during said session, and the presence of available session-specific content at said server.

28. (Canceled).

29. (Currently Amended) A method of providing ~~session-based~~ communication at a client of string-based content from a server, comprising the steps of:

providing a communication protocol that enables an asynchronous session-based connection over a network between a client object and a server object, and allows the client object

to send, within a session between the client object and the server object, a plurality of consecutively input query strings, to query the server for string-based content;

transmitting, via the client object in communication with said client, via the network to the server object a plurality of consecutive queries, within the ~~same~~ session between the client object and the server object, to retrieve content from the server, wherein the client object receives additional characters from a user, and as each character is being received transmits to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server, wherein each consecutive query lengthens the query string by one or more characters, and forms a lengthening query string for retrieving content from the server; and

receiving, via said communication protocol, at the server object each of the plurality of consecutive queries from the client, and in response to receiving each query as it is being lengthened by one or more additional characters, automatically matching the lengthening query string against the content of the server, and asynchronously returning consecutive responses containing increasingly relevant content information to the client object for immediate use by the client.

30. (Previously Presented) The method of claim 29, wherein the server object matches each query received from the client against an in-memory cache, and returns cached content to the client without accessing said content engine, unless the cached content has expired since it was last received from said content engine.

31. (Previously Presented) The method of claim 29, wherein the server analyzes the time between said consecutive queries received from each client system, and skips selected ones of said consecutive queries to reduce network communications and the load on said content engine.

32. (Previously Presented) A system for session-based retrieval at a client of content from a server, comprising:

a communication protocol that enables an asynchronous session over a network between a client and a server, and allows the client system to send, within a session between the client and the server, a plurality of consecutively input query strings, to query the server for content;

one or more content engine objects, in communication with the server object, that are capable of retrieving information from a content source containing string-based data by using a lengthening string as part of a content query and by returning matching data from the content source;

a user interface at the client that allows a user to enter a search string;

a client object, at the client, wherein the client object receives characters of the search string from the user interface as it is being entered by the user, and transmits via the network to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server system, wherein each consecutive query matches the characters of the search string as it is being entered, to form the lengthening search string for retrieving content from the server;

a server object, at the server, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving the lengthening search string from the client object, automatically matches the search string against the content of the server system, and asynchronously returns increasingly relevant content information to the client object for immediate use by the client; and

wherein the content information is used by the client to immediately update the user interface with options that match the content of the server system, as the user is entering the search string.

33. (Previously Presented) A method of providing session-based communication at a client of string-based content from a server, comprising the steps of:

providing a communication protocol that enables an asynchronous session over a network between a client and a server, and allows the client system to send, within a session between the client and the server, a plurality of consecutively input query strings, to query the server for content;

providing one or more content engine objects, in communication with the server object, that are capable of retrieving information from a content source containing string-based data by using a lengthening string as part of a content query and by returning matching data from the content source;

providing a user interface at the client that allows a user to enter a search string;

providing a client object, at the client, wherein the client object receives characters of the search string from the user interface as it is being entered by the user, and transmits via the network to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server system, wherein each consecutive query matches the characters of the search string as it is being entered, to form the lengthening search string for retrieving content from the server;

providing a server object, at the server, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving the lengthening search string from the client object, automatically matches the search string against the content of the server system, and asynchronously returns increasingly relevant content information to the client object for immediate use by the client; and

wherein the content information is used by the client to immediately update the user interface with options that match the content of the server system, as the user is entering the search string.

34. (Previously Presented) The system of claim 1, whereby the client object indicates the selection of the content sources to be queried to the server when said session is initiated and when content source selection changes are needed thereafter, without needing to embed said content source selection with each of said consecutive string-based queries.

35. (Previously Presented) The system of claim 1 whereby said session is shared by multiple client objects that exchange messages with the same server system, whereby each client object identifies a different content source selection to which said consecutive queries from the individual client object will be mapped by its corresponding server object.

36. (Previously Presented) A system for providing session-based searching of string-based content from a server, comprising:

a user interface at a plurality of clients that allows a user at each of the plurality of clients to enter a string of consecutively input queries to query the server for string-based content, wherein each consecutive query lengthens the query string by one or more additional characters;

a communication protocol that transmits over a network, via a client object at each of said clients, to a server object at the server, the plurality of consecutive queries, to retrieve content from the server, wherein each additional character is immediately transmitted to the server object as the user is entering the additional characters in the user interface, to form an lengthening query string for retrieving content from the server; and

a server object which in response to receiving each query as it is being lengthened by the one or more additional characters, automatically matches the lengthening query string against the content of the server, and, as the user of a particular client is entering queries, asynchronously modifies the user interface by returning increasingly relevant server content information to the client object for immediate display to the user.

37. (Previously Presented) A method of providing session-based searching of string-based content from a server, comprising, comprising the steps of:

providing a user interface at a plurality of clients that allows a user at each of the plurality of clients to enter a string of consecutively input queries to query the server for string-based content, wherein each consecutive query lengthens the query string by one or more additional characters;

transmitting over a network, via a client object at each of said clients, to a server object at the server, the plurality of consecutive queries, to retrieve content from the server, wherein each additional character is immediately transmitted to the server object as the user is entering the additional characters in the user interface, to form an lengthening query string for retrieving content from the server; and

in response to receiving each query as it is being lengthened by the one or more additional characters, automatically matching the lengthening query string against the content of the server, and, as the user of a particular client is entering queries, asynchronously modifying the user interface by returning increasingly relevant server content information to the client object for immediate display to the user.

38. (Previously Presented) The system of claim 1 wherein the client software is used to one of display suggestions, perform auto-completion, or provide type-ahead functionality, based on matching string-based data queried in a database by the server object on the server system.

39. (Previously Presented) The system of claim 1 wherein the client software one of validates or checks the input string based on responses received from the server object on the server system.

40. (Previously Presented) The system of claim 1 wherein the lengthening query string is one of a part of a name, email address, URL, phone number, or other typed string that can be normalized as a simple term, definitional term, relational term, quote, simple number, compound number, date, URL, e-mail address, phone number, or XML formatted data corresponding to a DTD or schema.

41. (Previously Presented) The system of claim 1 wherein the matching content returned by the server object contains one of a term from a thesaurus system, result received from a search and retrieval system, text from a reference work, match from an address book, appropriate instructions or actions to be taken received from a control system, entry from a dictionary, thesaurus, or encyclopedia, match from a commercial products database, quote from a literary quotes library, real-time stock quote, content from a real-time news service, Internet advertisement, result of a complex function, translation received from a language translation engine, entry from a classification scheme, match from a lookup list such as cities or countries in an order form, match from a auto-complete history or a language code, creation date, modification date, pronunciation, meaning, possible use, synonym, reference, scope note, notation, source, UDC coding, description, product code, category, price, currency, stock symbol, company name, stock quote, machine instruction or a city or a country.

42. (Previously Presented) The system of claim 1 wherein the server object retrieves the matching string-based data from an in-memory cache of responses to previous queries.

43. (Previously Presented) The system of claim 1 wherein the server object, in communication with a content access module object, retrieves matching content from multiple content engines, and wherein the server object embeds the query string into a native query for each type of content engine.

44. (Previously Presented) The system of claim 43 wherein the content engine is a SQL database or a search engine.

45. (Previously Presented) The system of claim 1 wherein the client software displays arrow symbols to indicate the availability or lack of matching results.

46. (Previously Presented) The system of claim 1 wherein the client software displays a checkmark symbol if only one match was found for the query string.

47. (Previously Presented) The system of claim 1 wherein a plurality of client objects are logically linked to multiple content sources on the server system, so that results received and returned by each corresponding server object are the result of a match to both the lengthening query string and values contained by one or more of the other client objects.

48. (Previously Presented) The system of claim 1 wherein the client software displays images and/or movies corresponding to individual matches received from the server system.

49. (Previously Presented) The system of claim 1 wherein only a specific requested or expected range of matches are returned to the client object any one time.

50. (Previously Presented) The system of claim 1 wherein the client software runs in a web browser.

51. (Previously Presented) The system of claim 1 wherein the client software displays a symbol inside of an input field to indicate the presence and availability of said system to text entered into said input field.

52. (Currently Amended) A system for suggesting data as a response to client requests, comprising:

a server configured to receive requests from a plurality of clients for content;

an interface to a plurality of databases or data sources of content information coupled to said server;

a communication protocol that provides a session connection between a client and the server, and allows the client to send, as part of the same session, a plurality of queries to query the server for content, wherein each of the plurality of queries are consecutive and form an increasingly focused query string for retrieving content from the server, and wherein each subsequent one of the plurality of queries extends the query string by one or more additional characters; and

wherein said server simultaneously applies the increasingly focused query string against the plurality of databases or data sources as it is ~~begin~~ being extended, and suggests a set of increasingly appropriate content or search criteria from the plurality of databases, to the client, for further use by the client within the same session.

53. (Currently Amended) A method of suggesting data as a response to client requests, comprising the steps of:

providing a server configured to receive requests from a plurality of clients for content;

providing access to a plurality of databases or data sources of content information coupled to said server;

providing a communication protocol that provides a session connection between a client and the server, and allows the client to send, as part of the same session, a plurality of queries to query the server for content, wherein each of the plurality of queries are consecutive and form an increasingly focused query string for retrieving content from the server, and wherein each subsequent one of the plurality of queries extends the query string by one or more additional characters; and

simultaneously applying the increasingly focused query string against the plurality of databases or data sources as it is ~~begin~~ being extended, and suggests a set of increasingly appropriate content or search criteria from the plurality of databases, to the client, for further use by the client within the same session.

54. (Previously Presented) A system comprising:

a client object on a client computer and a server object on a server computer, whereby the client computer and the server computer are linked by a network so that they can exchange information;

wherein the client object is linked to an input element in a user interface that allows a user to enter textual information comprising characters and strings to create incremental user input comprising a mutating string of characters;

wherein said user input is transmitted by the client object to the server object while said user input is being formed by a specific user during a user session;

wherein the server object uses said user input received from the client object to query data from one or more content sources, and to return result strings matching said user input asynchronously from said server computer while the input is being formed on the client computer; and

wherein the client object displays said results in a display element in the user interface on the client computer.

55. (Previously Presented) The system of claim 54 whereby said client object is embedded in an object that is part of a web page and appears in a web browser on the client computer.

56. (Previously Presented) The system of claim 54 whereby each of said matching result strings is accompanied by a key that identifies each result as it was retrieved from the one or more content sources, whereby the key of selected results can be used for sorting and merging and sorting in the server computer and are transmitted back to the client object for use on the client system.

57. (Previously Presented) The system of claim 54 whereby the client object accumulates the user input for an amount of time before sending the resulting string of characters to the server object as a single consolidated query string, to decrease network traffic and decrease the load on the server computer.

58. (Previously Presented) The system of claim 57 whereby the input element on the client computer contains a visual object displayed within the display element that indicates to the user that

user input was sent to the server object whereby the visual object keeps changing while matching results are being awaited from the server system, and whereby said visual object first changes when the user enters textual information, and before the user input is sent to the server, indicating to the user that the user input is being accumulated by the client object before sending it to the server object.

59. (Previously Presented) The system of claim 54 whereby the server object provides one or more content channels for retrieving configurable sets of data available on the server computer, whereby each content channel defines a logical data set to be retrieved from the one or more data sources.

60. (Previously Presented) The system of claim 54 whereby the server object caches the result data received from said content sources and uses said cached result data as a response to later client requests originating from the same client object or from a different client object.

61-62. (Canceled).

63. (New) A system for allowing a user to retrieve content in an online environment, including suggesting possible data matches to the user simultaneously and asynchronously while the user is entering their query string, comprising:

a server configured to receive requests from a plurality of clients for string-based content, wherein the server further comprises an interface to one or more databases or data sources of content information;

a client software and graphical user interface at each of the plurality of clients, wherein the client software includes one of a connection or status indicator to indicate the availability of a connection between the client and the server and the status and availability of increasingly available content at the server for selection by a user, and wherein the client software allows the user to enter a query string of consecutively input characters to query the server for content, wherein each consecutive query lengthens the query string by one or more additional characters;

a communication protocol that enables an online connection over an Internet network between the client and the server, and allows the client to send via the Internet, within a session between the client and the server, a lengthening string composed of the plurality of consecutively input characters, to query the server for content, while simultaneously and asynchronously receiving consecutive responses from the server while the characters are being input;

a client object, in communication with the client software at the client and with the communication protocol, wherein the client object receives additional characters from the client software while they are being entered by the user, and while consecutive characters are being received, transmits via the Internet to a server object at the server a plurality of consecutive queries, within the same user session, to retrieve content from the server, wherein each consecutive query lengthens the string by the additional characters, to form a lengthening query string for retrieving matching content from the server; and

a server object, in communication with the server, and with the client object via the communication protocol, wherein the server object in response to receiving the consecutive queries that form the lengthening query string, automatically uses the lengthening query string to query and retrieve content information from the databases or data sources of content information, including checking if the lengthening query string matches any previously stored query results retrieved as the result of a prior query from the same or a different user, and then asynchronously returns, while the additional characters are being input and while the string is being lengthened during the user session, consecutive responses containing increasingly matching data matches to the user as a list of possible data matches that can be immediately selected and used in the client software by the user.

64. (New) A system for allowing a user to retrieve content in an online environment, including suggesting possible data matches to the user simultaneously and asynchronously while the user is entering their query string, comprising:

a server configured to receive requests from a plurality of clients for string-based content, wherein the server further comprises an interface to one or more databases or data sources of content information;

a client software at each of the plurality of clients, wherein the client software includes a graphical user interface and one of a connection or status indicator to indicate the availability of a connection between the client and the server and the status and availability of increasingly available content at the server for selection by a user, and wherein the client software allows the user to enter into a query field a query string of consecutively input characters to query the server for content, wherein each consecutive query lengthens the query string by one or more additional characters, and wherein while consecutive characters are being received, the client software transmits via an Internet network to the server a plurality of consecutive queries, within a session between said client and the server, to retrieve content from the server, wherein each consecutive query lengthens the string by the additional characters, to form a lengthening query string for retrieving matching content from the server;

a communication protocol that enables an online connection over the Internet between the client and the server, and allows the client to send via the Internet, and within a user session, a lengthening string composed of the plurality of consecutively input characters, to query the server for content, while simultaneously and asynchronously receiving consecutive responses from the server while the characters are being input; and

a server software at the server, which in response to receiving the consecutive queries that form the lengthening query string, automatically uses the lengthening query string to query and retrieve content information from the one or more databases or data sources of content information, including checking if the lengthening query string matches any previously stored query results retrieved as the result of a prior query from the same or a different user, and then asynchronously returning, while the additional characters are being input and while the string is being lengthened during the session, consecutive responses containing increasingly matching data matches to the user as a list of possible data matches, which can be immediately selected and used in the client software by the user.